DEQ
Montana Department of Environmental Quality

January 9, 2018

Mike Cirian
U.S. Environmental Protection Agency
10 W 15th Street, Ste. 3200
Helena, MT

Subject: DEQ Comment on the Human Health Risk Assessment Work Plan and Baseline Ecological Risk Assessment Work Plan for the Columbia Falls NPL Site

Dear Mike:

The DEQ appreciates the opportunity to review and comment on the above referenced work plans, along with the review comments prepared by CDM Smith. In general, we found the document to be clearly written but without an analysis of data from Phase 2 sampling, the human health and ecological risk assessments cannot be finalized. Additionally, the author(s) interlaced a notable number of risk management statements into the document that should be deleted, so that the focus is on the analysis of human health and the environment, not on subsequent risk management decisions. Lastly, all exposure pathways should be evaluated as part of the final assessment of human health and ecologic risks presented by the various source terms and areas within the boundaries of the site, and to where the contaminants have come to reside.

Our general and specific comments are attached below for your consideration and inclusion in a transmittal to the responsible party. It is noteworthy that DEQ's risk assessor's comments are similar to CDM Smith's comments on these two analyses.

In conclusion, the state recommends that Phase 2 of the RI focus on generating the data and information needed to complete the risk assessments, without the potential risk management actions, to support a comprehensive analysis of remedial action strategies to reduce risks to an acceptable level in the upcoming Feasibility Study for the site. Feel free to contact me with any question you may have.

Sincerely

Dick Sloan

Dick Sloan
Senior Environmental Project Officer
Department of Environmental Quality
1225 Cedar Street
Helena, MT 59601

cc. Thomas M Stoops, DEQ
Katie Morris, DEQ
Aimee Reynolds, DEQ

Baseline Human Health Risk Assessment Work Plan

General Comments

1. It is DEQ's understanding that additional data will be collected during the Phase II Site Characterization. Please note that any additional data collected during this investigation or any other investigations must be added to the risk assessment. Please include a statement that any additional data will be included in the risk assessment and adjustments to constituents of potential concern (COPCs) and/or exposure areas will be updated as needed.
2. Please note that DEQ's Risk-Based Corrective Action Guidance for Petroleum Releases (RBCA) and the EPA Regional Screening Levels (RSLs) were updated in 2017. Please include the updated screening levels and adjust the list COPCs where needed. DEQ's updated RBCA screening levels are attached.
3. Numerous statements are made throughout the document regarding Columbia Falls Aluminum Company's (CFAC) intent to manage risk through institutional controls, land covers, and restricted groundwater use. The Baseline Risk Assessment should provide a clear picture of the potential threats to human health in order to determine what remedial actions are needed and should not assume that institutional control, land covers, fences, etc. will account for risk reduction. Risk management decisions may be discussed after the potential risks at the site have been evaluated. Please revise the document, removing these statements and include a full evaluation of risks for both current and potential future use scenarios. This should include an evaluation regarding the future use of groundwater as a drinking water source and irrigation source. This evaluation may be done qualitatively via a comparison of groundwater concentrations to Montana Circular DEQ-7 human health standards, which are risk-based.
4. The basis for the exposure area boundaries is unclear and seems to be based solely on the operational site history. Please provide an explanation of exactly how and why the boundaries of each exposure area were chosen and include separate figures for each individual exposure area showing the location of all data points collected within each area. Please ensure that exposure areas are based on current and potential future receptor exposure and not past use of the site.
5. The current EPA residential lead screening level of 400 mg/kg is based on the United States Department of Health and Human Services' Center for Disease Control and Prevention (CDC) and EPA's adopted 10 microgram per deciliter (µg/dL) blood lead (PbB) concentration of concern. In 2012, the CDC released an updated reference level for PbB of 5 µg/dL; EPA has since recommended that cleanup levels for lead be based upon a PbB of 2 µg/dL to 8 µg/dL. In order to be protective of both adults and children in a

residential scenario and minimize the possibility of having to conduct additional remedial actions to address lead, DEQ has developed a residential lead cleanup level of 153 mg/kg which is based upon the 5µg/dL endpoint. Attached is DEQ's memo providing screening levels for residential, industrial/commercial, and construction work scenarios. Please evaluate lead using these screening levels.

6. Please note that DEQ considers a cumulative excess lifetime cancer risk of 1 in 100,000 (1×10^{-5}) an allowable risk for exposure to cancer-causing compounds and a cumulative hazard index of 1 for non-cancer-causing compounds. To help users ensure that screening levels are protective of these cumulative risks, DEQ developed a soil screening flow chart (http://deq.mt.gov/Portals/112/Land/StateSuperFund/Documents/SoilScreenFlowchart2016.pdf?ver=2016-05-19-153548-370) to evaluate direct contact and leaching to groundwater in surface and subsurface soils. Please apply the procedures outlined in this chart to determine the appropriate screening levels for soil samples at the Columbia Falls Aluminum Company Site.
7. To protect groundwater from future impacts, please note that the soil leaching to groundwater pathway should be investigated even if a compound was not detected or found above groundwater screening levels. Please include a section that discusses all compounds in soil exceeding leaching to groundwater across the site. Please update all screening tables, flagging compounds exceeding EPA Soil Screening Levels (SSLs) as COPCs for the site.
8. An evaluation of the toxicity and assessment of carcinogenic polycyclic aromatic hydrocarbons (c-PAHs) must be included in both the ecological and human health risk assessments. Please include the total c-PAH TEQ in all tables and include the total c-PAH calculation sheets. Please reevaluate the list of COPCs for all exposure areas and update where needed.

Specific Comments

9. Page 10, Section 2.5: Last paragraph, last sentence: The mitigating factors regarding covers or future anticipated restrictions can be used to manage risk but cannot be used to eliminate the need to evaluate risks but rather unacceptable risks may indicate the need for property use restrictions as a risk management tool. Please update this section and evaluate all current and future exposure pathways. This will provide a clearer understanding of what the exposure risks are and how they should be managed. Please see General Comments above regarding exposure areas. Please include a sub-section discussing the different exposure areas and how the boundaries for each exposure area were chosen in relation to risk posed to human health.
10. Page 11, Section 2.5.1: Please include "Migration of COPCs in surface water" and "Migration of COPCs in sediments" to the list of potential migration pathways.
11. Page 11, Section 2.5.2: 2nd paragraph – Please include all-terrain vehicle (ATV) riding as a potential future recreational activity at the site. 3rd paragraph – Please see General

Comments regarding the elimination of exposure pathways based on CFACs future risk management plans. The intent to restrict the use of the property cannot be used to eliminate the need to evaluate an existing or potential future risk.

12. Page 12, Section 2.5.3: Please refer to General Comments regarding the elimination of exposure pathways based on CFACs future risk management plans. The intent to restrict the use of the property cannot be used to eliminate the need to evaluate an existing or potential future risk.
13. Page 12, Section 2.5.3.1: First paragraph, last sentence – DEQ disagrees that this area could not be considered for residential or recreational use (park space, etc.) in the future especially given the undeveloped areas located within this exposure area. Please include potential future residents and recreators as future receptors in this area. Please refer to the General Comments above regarding the evaluation of groundwater and update this section where needed. Third paragraph, last bullet – Animals could come in contact with contaminated soil and/or plants within this area and migrate to surrounding hunting areas. Please include the ingestion of biota as a potential exposure pathway for this area. Also, please include this as a potentially complete exposure pathway in all other exposure areas throughout the document.
14. Page 16, Section 2.5.3.6, First bullet on page: Please include the direct contact of soil by future residents and recreators (ATV riders, hunters, etc.) as a potentially complete exposure pathway.
15. Page 18, Section 2.5.3.11: Please refer to General Comments regarding the elimination of exposure pathways based on CFACs future risk management plans. Please also see previous comments regarding the evaluation of groundwater.
16. Page 20, Section 3.1.1.1, 2nd full paragraph on page, second sentence: Please delete the following "and extensively characterized the nature and extent of COPCs across the Site". At this time, the nature and extent of COPCs has not been extensively characterized.
17. Page 21, Section 3.1.1.3: Please note that dioxin/furans should be screened using the calculated TEQs from the Phase I Site Characterization. Please include this data in the screening tables and update the list of COPCs where needed. Last full paragraph – Please see General Comments regarding the evaluation of groundwater across the Site.
18. Page 22, Section 3.1.1.3: 4th bullet on page – Please see General Comments regarding the evaluation of groundwater exposure across the site. If a compound exceeds the applicable leaching to groundwater screening criteria it should be retained as a leaching COPC. Exceedances of direct contact screening levels is not appropriate in determining a compound's leaching potential, please delete the following: "but did not exceed US EPA RSL or MDEQ RBSL for direct contact with soil…". Please provide a clear presentation of the exposure assessment results, including a list of COPCs, grouped by population (residents, industrial/commercial workers, etc.) and by current and future use categories for each exposure area. Please update this section throughout.

19. Page 37, Section 3.1.2.2, Site-specific exposure assumptions: The Health and Safety Plan is not an appropriate document for developing exposure assumptions relating to decommissioning workers. Exposure assumptions should be based on exposure time, duration, frequency etc. which cannot be determined from this plan. Please delete this sentence and use the industrial worker and construction worker default exposure assumptions as a starting point to develop site-specific assumptions for decommission workers.

Baseline Ecological Risk Assessment Work Plan

General Comments

20. The Final Screening Level Ecological Risk Assessment indicated that ecological risks associated with exposure to dioxins, furans, and dioxin-like PCB compounds in soils in the Main Plant Area would be evaluated as part of the BERA. Please include a section that discusses how ecological risks for dioxin/furans were evaluated or will be evaluated. Please include the calculated TEQ values in the screening process (Table 4) along with applicable TEQ ecological screening levels. Please adjust the list of COPCs where needed.
21. An evaluation of the toxicity and assessment of carcinogenic polycyclic aromatic hydrocarbons (c-PAHs) must be included in both the ecological and human health risk assessments. Please include the total c-PAH TEQ in all tables and include the total c-PAH calculation sheets. Please reevaluate the list of COPCs for all exposure areas and update where needed.

Specific Comments

22. Page 13, Section 3.3.3, second paragraph: Any areas where groundwater seeps to the surface would be considered areas where ecological receptors may be exposed. Ecological exposure to seeps should be evaluated Please update exposure pathways exposure to these seeps. .
23. Page 29, Section 3.4.4: Please expand the list of COPCs in soil and sediment, listing out the specific metals and PAHs.
24. Figure 4:
    - Please include direct ingestion of surface water for amphibians, reptiles, terrestrial birds, and terrestrial mammals as a potentially complete pathway.
    - Please include the direct ingestion of aquatic biota for terrestrial mammals as a potentially complete pathway.
    - Please include incidental ingestion of sediment/pore water as a potentially complete pathway for amphibians, reptiles, terrestrial birds, and terrestrial mammals.

- Please update the text stating how each of these additional pathways will be evaluated.

25. Figure 5:
    - Please include incidental ingestion of sediment/pore water as a potentially complete pathway for amphibians, reptiles, terrestrial birds, and terrestrial mammals.
    - Please include direct contact of sediment/pore water as a potentially complete pathway for amphibians, reptiles, terrestrial birds, and terrestrial mammals.
    - The Transitional Exposure Area is noted in the text as having seasonal groundwater seeps present at the surface. Please include the seeps as an exposure medium for ecological receptors in this area.
    - Please include incidental ingestion of subsurface soil for soil invertebrates, amphibians, reptiles, and terrestrial mammals as a potentially complete pathway.
    - Please update the text stating how each of these additional pathways will be evaluated.
26. Figure 6:
    - Groundwater seeps have been documented within the Terrestrial Exposure Area (area 8) therefore; please include them as an exposure medium for ecological receptors in this area.
    - Please include incidental ingestion of subsurface soil for soil invertebrates, amphibians, reptiles, and terrestrial mammals as a potentially complete pathway.
    - Please update the text stating how each of these additional pathways will be evaluated.
27. Table 4 – 6: Section 3.3.1 presents the refined ecological exposure areas. Please present the constituents of potential ecological concern (COPECs) in these tables based on these 3 areas.

Appendix A: Please reference the source of the Ecological Screening Values shown for both the SLERA and the BERA in the notes section for each table.